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REMARKS

Claims 1-6 remain pending in the application for consideration on the merits.

Claim Rejections Under 35 U.S.C. § 103:

Claims 1-6 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Snyder et al. (U.S. 5,907,495) in view of Spain et al. (U.S. 6,835,267). Applicants respectfully traverse these rejections.

Claim 1 is directed to a method for determining a paint formulation for producing a paint characterized by desired color coordinates in a three-dimensional color space and desired durability characteristics from a set of known constituents, said method comprising: providing a plurality of color coordinates, each of the color coordinates corresponding to paint formulations having respective diverse apportionments of the known constituents; providing durability data related to durability characteristics exhibited by the paint formulations having the respective diverse apportionments of the known constituents; performing regression of the color coordinates and the diverse apportionments of the known constituents to establish a set of interdependent equations having first variables corresponding to the known constituents and second variables corresponding to the color coordinates; providing coordinates of a desired color; and recursively solving the set of interdependent equations for values of the first variables which substantially equate the second variables to color coordinates substantially near to the desired color wherein the values of the first variable are constrained by the durability data related to the durability characteristics exhibited by the paint formulations.

Claim 4 is directed to a method of determining a paint formulation for producing a paint characterized by desired color coordinates in a three-dimensional color space from a set of known constituents, the method comprising: providing a plurality of paint samples, each paint sample characterized by respective diverse constituent apportionment data; providing respective color coordinate data defining, for each paint sample, color position in a three dimensional color space; providing durability data related to the durability characteristics exhibited by each of the paint samples; relating

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the constituent apportionment data to the color coordinate data to derive a formulation model characterized by correlation of the known constituents to color attributes defining color positions in the three dimensional color space, each color position further defined by the durability characteristics exhibited by its respective paint sample; applying the color coordinate data and the durability data to a select paint color in the three dimensional color space to determine constituent apportionments corresponding to the select paint color.

With regard to the prior art rejection, the examiner stated that, "Snyder et al. discloses a method for determining a paint formulation . . . But Snyder et al. fails to clearly specify the method comprising providing durability data." The examiner then states that, "Spain et al. discloses providing durability data related to durability characteristics exhibited by paint formulations having the respective diverse apportionments of the known constituents (C21 and C22); and wherein the one of the durability characteristics is selected from a group consisting of gloss, adhesion, distinctness of image and fade." And, "it would have been obvious to a person of ordinary skill in the art to modify the above invention suggested by Snyder et al. and combining it with the invention disclosed by Spain et al." Applicants respectfully disagree with the combination of Spain et al. with Snyder et al. to find obviousness over the claimed invention.

Snyder et al. is concerned with being able to produce a desired color. It discloses a method that will allow one to combine pigments in order to produce this desired color. The application of the three-dimensional color space is part of the method for assuring that the desired color is obtained.

Spain et al. is directed to an automotive paint coat that is applied to a flexible backing sheet, which is subsequently bent and stretched to match the contours of and laminated to the exterior surface of a plastic car body panel. Since this type of application of paint to a car body is so different from the conventional, Spain et al. discloses running tests on various paint formulations (when Spain et al. discusses "paint formulations," it is referring to different general types of paint, not different color pigments) in order to determine if these different types of paints will even work properly when applied to a sheet and then stretched over a three-dimensional body panel surface.

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While durability is a factor discussed in Spain et al., it is in the context of running long term durability tests relating specifically to paint applied to a backing sheet that is subsequently adhered to a vehicle body panel in order "to determine the usefulness of a paint coat for exterior automotive applications . . . Both of these tests require long-term exposure of the panel to a particular environment." (Col. 23, Lines 24-28) The tests are carried out over three months to two years in duration. Other types of paint tested in Spain et al. disclose that they cannot even meet initial requirements for paint after being stretched and formed onto a car body panel, so they are not subjected to the long term durability tests. (See Col. 3, line 66 to Col. 30, line 56) The durability tests are, therefore, conducted to determine if a general type of paint will work at all, not to determine durability parameters base on the differences in pigments added to obtain a particular color of paint—let alone employing sample test results to be able to determine if future new combinations of pigment constituents will produce a new color that still has desired durability characteristics without having to conduct durability tests on this new combination of pigment constituents. Moreover, Spain et al. does not suggest conducting durability tests on multiple samples throughout a three-dimensional color space. This durability testing throughout the three-dimensional color space is what provides the ability to predict the durability characteristics for the new paint colors that have not undergone specific durability testing.

The claimed invention, on the other hand, is directed to testing paint samples of varying colors throughout the three-dimensional color space up front in order to be able to create equations having variables with parameters constrained by the durability data. Having durability data as it relates to the three-dimensional color space is significant because this allows for the creation of new paint formulations without having to conduct new durability tests, thus greatly reducing the lead time required to get a new paint color into production on a vehicle. Accordingly, claims 1 and 4 are not obvious in view of the cited art.

Claims 2 and 3 depend from claim 1, and claims 5 and 6 depend from claim 4, and are thus distinguishable over the cited references for at least the reasons discussed above relative to claims 1 and 4, respectively.

Consequently, applicants respectfully request that the rejections be withdrawn.

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Conclusion:

In summary, the applicants believe that each formal and substantive requirement has now been met. The application is now believed to be in appropriate condition for allowance, which action is respectfully requested.

Respectfully submitted,



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